

The MINES of ARIZONA

This department is under the direction of Mr. W. E. Defty, the well known mining engineer, who will carefully scrutinize all matters relating to mining in order that only reliable information regarding legitimate enterprises shall find a place here.

The Republican would be pleased to receive information from any part of the state regarding the development of the mining industry. All communications should be addressed: Mining Department Arizona Republican.

QUICKSILVER

Quicksilver is a metal much in demand just now and the search for it is being stimulated by the abnormal price and undoubtedly the stimulus given lately to the production of the metal will induce greater interest in the matter for many deposits hitherto too low grade to be mined will now attract exploitation. In this connection we may mention that cinnabar is one of the most lustrous minerals that are amenable to flotation, so that we shall expect to hear of notable results. There are several old quicksilver properties that have recently been opened up.

The following are excerpts from an article by Mr. W. H. Landers, manager of the New Almaden Quicksilver company in California, and appeared in the last issue of the Mining and Scientific Press.

"The high price for quicksilver, at present something over \$300 per flask, has drawn attention to its production. So much has been written on the occurrence and geology of the quicksilver deposits of the United States that it seems a waste of good time to discuss the geologic features.

Cinnabar ores are distributed far more widely than is generally supposed; but the low price in recent years naturally has removed the stimulus to prospecting. This explains the decline in American production. Present prices have caused a renewal of activity in mining and it is my belief that they will never reach as low a level as that obtaining before the war checked the importation of this metal into the United States.

The mining of quicksilver ore does not differ materially from that of any other contact deposit. Much the same conditions of hard and soft rock are offered and the same questions arise as to handling of water, the timbering of the drifts and stopes, the economic breaking and the transportation of the product.

Cinnabar ore is generally rated in terms of mercury percentage and this in itself is not calculated to excite interest as much as if the value were quoted in terms of dollars and cents per ton of ore. Statistics indicate that the average ore mined in California for the last three or four years contained 0.6 per cent mercury. It is quite true that such ore may be considered low-grade in comparison with that formerly mined or from a money standpoint, 0.6 per cent just prior to the war being worth only \$6.00 per ton. However the present price of \$300 per flask means that the same yield is now worth

\$48 per ton. Compare this with the value of a comparatively rich gold mine, and the reason for the present public interest is evident. It is surprising what a number of promising surface showings of cinnabar ore exist in certain districts, and more surprising still that after a year of high prices, most of them remain undeveloped. It is hard to believe that any other form of mining could have attracted so little interest. This may be explained by the fact that there is no market for cinnabar ores as such, and that to convert even high grade cinnabar ore into money, it is necessary to have access to a furnace. Few, if any, of the larger companies purchase outside ores. Another reason is that as far as California is concerned, quicksilver ores are found only on agricultural patented land.

Cinnabar ores are reduced by a process of distillation that is, the ore is heated to such a temperature (about 625 degrees F.) as is necessary for the volatilization of the sulphur and the vaporization of the remaining mercury. These vapors must then be cooled below the boiling point of mercury. The method of treating cinnabar ores as at present practiced has undergone practically no change of improvement since 1871, when Robert Scott and his co-workers developed what is known as the tile furnace at New Almaden.

It will be observed by the above statements that the California quicksilver properties have been working successfully and profitably on 0.6 per cent ore and this whilst the metal was at its regular low price for a number of years. The treatment of quicksilver ore is intricate and tremendous waste attendant upon it. But the time has arrived when these old and antiquated methods are about to cease. The admission in the article that cinnabar ore are perfectly amenable to the flotation process, puts an entirely different phase on their treatment and also the enormous saving, over and above the old processes. We have contended for some time that the ores found in the large deposits north of Phoenix, could be treated successfully by the flotation process. More recently the adaptation of such treatment for the ores in these areas, would mean a greater extraction than that of California, for the simple reason that the California veins are narrow, irregular and precarious, whereas the deposits north of Phoenix, both in Maricopa and Gila counties, are large and bold and really a tremendous tonnage of commercial ore could be obtained by open excavation, sometimes to a width of 20 feet. This does not include the high-grade seams and veinlets all through the schistose vein system. Comparison can be legitimately made to any of the properties in California and also those in Mexico down to the states of Guerrero and Michoacan, but in my opinion not any of them bears comparison with those in our close vicinity. Of course quicksilver is not mined generally in these areas, it is an odd metal and it's only the few that might be expected to be interested, but when the above properties get into the right hands and are worked practically, we will see these areas immensely productive and remunerative, and with every possibility and probability of their becoming the largest producers of the liquid metal in the United States.

MINING NOT ALL HAPHAZARD

The well opened copper mines that have been producing regularly for years do not depend for profits on luck from day to day. The big companies are not pursuing a single elusive vein, and there is no now-you-see-it-and-now-you-don't.

All the important porphyry mines have taken from their wide spreading shallow deposits hundreds of drill cores from which the engineers have accurately tabulated and mapped the values underground to the end that work can be so directed as to give desired results.

In the deeper vein mines there are miles of drifts in advance of stoping carefully mapped, often in colors, to show where poor, fair, average, good, rich ground is to be found. It is within the power of the management, who alone has knowledge of the workings in detail, to raise or lower yields and profits for months at a time, without changing the figures for rock output, if they so desire.

In the case of most mines, production is limited only by mill capacity, as it is now, and it is a disputed question whether in the long run it is better to raise the output of copper by mining the richest rock when metal prices are high, or to make a more even showing of earnings from year to year by milling low grade rock when copper is above 25c, and saving the best to be worked when prices are low. There are good arguments on both sides.

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30x4	12.00	2.75
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32x4	12.75	2.95
33x4	13.75	3.05
34x4	13.50	3.15
35x4	13.75	3.25
36x4	14.25	3.35
34x4 1/2	16.50	3.50
35x4 1/2	17.50	4.00
36x4 1/2	17.50	4.15
37x4 1/2	18.35	4.20
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36x5	20.75	4.85
37x5	21.00	5.00

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ous in its day and was often compared with this property. Considerable rich ore was taken from the ground and a reduction plant was erected, but the property seemed to meet one misfortune after another in its mismanagement. Those getting hold of it being more desirous of selling stock than working the mine in a practical manner. Years ago the property was owned by the Lincoln family, old and long residents of Phoenix. Rightly handled there seems no apparent reason why the property should not make good.

SNYDER SILVER MINE OPTIONED

This old silver producer near Bumble Bee has been bonded to E. J. Temple. Some rich ore was taken from this property in early days, but at the lowering of the price of silver, and being so far from transportation, it necessitated the closing down of the property. The deal was closed by W. W. Snyder, a long resident of Bumble Bee, just previous to his death. On a recent visit to this locality I met the old gentleman being brought down to Phoenix to receive medical attention. He looked very ill at that time and it eventually proved his last trip over the historic road he had traveled for many years.

Bumble Bee used to be a very busy center, and one never visited there unless he saw anywhere from 20 to 50 prospectors. Of late years the district has been very quiet indeed, but is now assuming considerable activity by the finding of tungsten ores in the vicinity and the renewed working and developments of old properties, both silver and gold.

MAJOR MINING CO.

We are pleased to note that the operations at this property on Lynx Creek is proving very successful and especially so as the developments are under the direction of a late resident of Phoenix, Colonel Fred Bowler. A six-foot vein has been encountered in the workings on the Eureka claim, the ore is sulphide and is said to be high in gold contents, with an additional value in silver. The ore was penetrated in the deepest workings on the property.

As will be seen by the recent notices regarding deals and finds in Yavapai county is surely coming into her own again. She is beginning to prove quite substantially and is receiving more attention from capitalists and mining men than for a number of years. There is every assurance that Yavapai will assume the importance in productivity that she possessed in her palmiest days, and it makes you feel good to know it.

SHANNON

Shannon Copper is expected to resume dividends by summer, possibly in April. With the resumption of operations after the long labor strike in the Clifton-Morenci district, the company goes on a producing basis of 900,000 to 1,000,000 pounds of copper per month, at a cost of 12 1/2 to 13c per pound. Earnings exceed 40c per share per month on 25-cent copper, or nearly enough to pay an entire quarter's dividend of 50c per share.

Shannon began the year with \$100,000 in cash, but will retire \$194,000 outstanding Shannon-Arizona Ry. bonds before resuming dividends. The last previous dividend was 50c on Jan. 20, 1915.

INSPIRATION

A meeting of the board of directors of the Inspiration Consolidated Copper Co. will be held on Thursday of next week. At that gathering, it is learned, the question of a dividend on the stock of the company will be taken up and it is considered virtually certain in usually well-informed quarters that an initial disbursement of \$1 quarterly will be ordered.

All construction work at the mines of the company has been completed and the property will be running at full capacity within a short time. In January the output was between 5,500,000 and 6,000,000 lbs. of copper. But operations in that month were interrupted by the heavy rainfall in Arizona, which caused several washouts and prevented shipments of ore to the smelters, resulting in an almost complete shutdown for seven days of January, while on several other days work was curtailed.

SHATTUCK-ARIZONA

Shattuck-Arizona has reduced its cost of copper production from 8 1/2 to 7 1/2 by doubling shipments of lead-silver ore profits on which serve to reduce the cost of producing copper. The company is now turning out 13,000 tons of 6 per cent copper ore monthly, and 2,000 tons of 20 per cent lead-silver ore. Shattuck-Arizona at this rate can carry the output at this rate can carry the \$1 dividend rate on 15-cent copper, and is earning more than double that figure on the present high copper market.

The output of the mine for January was: 1,565,244 lbs. of copper; 267,853 lbs. of lead; 20,263 ounces silver, and 524 ounces of gold.

WHY PRODUCTION FELL OFF

Copper production is falling short of consumption by over 22,000,000 to 29,000,000 pounds per month, according to various conservative estimates. Severe storms from Arizona and Mexico north to British Columbia and Alaska, and from Tennessee and Michigan westward to the Rocky Mountains, have curtailed December and January production in all the copper mining camps of the country.

UNITED VERDE EXTENSION

At the annual meeting of stockholders of this company, George Kingdon, was elected to the board all the old officers were re-elected.

George Kingdon as an addition to the board is a good one. It is added strength to an already strong board. George has much practical experience in Arizona and Mexico and his practical and efficient ability would be beneficial at the head of any mining enterprise.

GREENE-CANANEA

Operations at the mines of this company have been increasing from day to day since the company resumed work at the mines late last year and it is now stated that operations are near the full basis again.

THE SONG OF THE PROSPECTOR

The world is my home, for wherever I roam
I live where my poverty pleases;

LIGHTING ENGINEERS HONOR EDISON



John W. Lieb (right) presenting scroll of honorary membership in Engineers' Society to Thomas A. Edison. Mrs. Edison at husband's left.

On the eve of his sixty-ninth birthday, Thomas A. Edison was honored by the Illuminating Engineers' Society at a big banquet in New York. "He has done more than any other man to promote the art and science of engineering," were the words used by Charles P. Steinmetz, the president of the society, in referring to Mr. Edison.

OHIOAN WANTS SOME ARIZ. JACK RABBITS

State Game Warden Asks Willard for Consignment of Bin Hoppers to Transplant in Buckeye State.

State Game Warden Willard yesterday received a letter from John C. Speaks, game warden of the state of Ohio, asking to be put in touch with some one in this locality who could supply him with a "coopful of live jack rabbits, it being the intention of the Ohio official to let the big animals get a start in that state. Mr. Speaks had seen the jack rabbits running about on the western plains and thought that they might offer a good target for the Ohio sportsmen to shoot at if they were once allowed to get a start in that state. Mr. Willard is making arrangements to supply the Ohio warden with several pairs of the rabbits.

Several weeks ago Mr. Willard shipped several dozen Gambel quail to Mr. Speaks, and the birds will be made to start in Ohio and an effort will be made to liberate them.

No rest-sitting day, and no taxes to pay;
No signing of long-winded leases, my pulchre is built with a blanket and quilt
My roof is the star-studded sky;
While boiled beans and bacon, three times a day taken,
Are as filling as beefsteak and pie.
If the diet is greasy, the housework is easy,
And the lodging is airy and free,
So I don't give a dern for any dern man
Who don't give a dern for me.

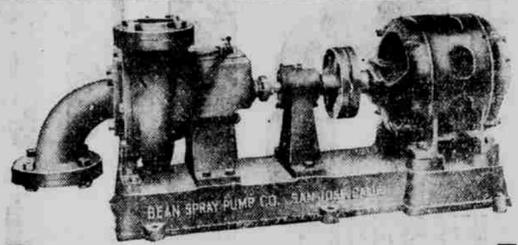
I can hit a good lick with a hammer and pick,
And feast upon coffee and hard-tack;
If the dirt doesn't pay, I'm off the next day
On the hurricane deck of an old jack,
I have prospects and claims with most wonderful names,
All bulging with mythical riches;
But promoters take fright when they catch a first sight
Of the patch on the seat of my breeches,
The cooper's a stain—there's no fissure vein;
The gold's not rebellious or free,
Still I don't give a dern for any dern man
Who don't buy a claim from me.

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Cave dwellings	10 miles
Oak Creek Trout Stream	18 miles
Montezuma's well	50 miles
San Francisco peaks	12 miles (Elevation 13,900 feet)
Altitude of Flagstaff	5907 ft.
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